

## ABSTRACT OF THE INVENTION

5 A technique is disclosed for facilitating communications between a network node  
and a Head End of an access network. The access network includes a plurality of nodes  
which communicate with the Head End via at least one upstream channel and at least one  
downstream channel. The Head End is configured to monitor channel conditions on  
selected channels of the access network. The Head End is also configured to modify or  
change the modulation profile used on a selected channel in response to detecting a change  
10 in conditions on that particular channel. If the Head End detects that the channel  
conditions have deteriorated, the Head End may change the modulation profile on the  
selected channel to one which is better suited for transmitting data on the channel given  
the current channel conditions. If the Head End detects that the channel conditions have  
improved, the Head End may change the modulation profile on the selected channel to one  
15 which provides for faster data transmission on the selected channel.